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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,686	11/27/2001	Toshinori Tanaka	Q66753	7302

7590 10/27/2003
SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania, N.W.
Washington, DC 20037

EXAMINER

LE DANG D

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,686

Applicant(s)

TANAKA ET AL.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b)

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) is/are withdrawn from consideration.
- 5) ☐ Claim(s) is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) is/are objected to.
- 8) ☐ Claim(s) are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. .
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0803.
- 4) ☐ Interview Summary (PTO-413) Paper No(s): .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/25/03 have been fully considered but they are not persuasive. The applicant's argument is on the ground that Bruhn does not show "a brush having three or more tapered contact portions" and the applied references in the rejection of claim 2 do not show the "the contact portions of the brush are disposed at opposite edges of the brush in the pressing direction", "the tip end portion of said lead wire is inserted into said brush in said pressing direction so as to extend over two thirds or more of the length of said brush in said pressing direction."

It is noted that Figure 2 of Bruhn shows two grooves (11, 12), inherently providing three contact portions. However, Bruhn discloses "one or more grooves" in column 2, lines 28-30, inherently showing that many contact portions can be made.

Moreover, it is well known in the art of motor and generator that the brush can be made with many contact portions as shown in Figure 4 of Schwabbauer et al., Figure 3 of Moberly, and Figure 3a of Isao (JP 06-133500).

In addition, Figure 10 of the present application clearly shows "the contact portions (32a and 32B) of the brush are disposed at opposite edges of the brush in the pressing direction (Z)". Kerlin et al. also show the tip end of the lead wire being disposed more than two third of the brush. In fact, the tip end of the lead wire can be extended the entire width of the brush as shown in Figure 5 of Hironobu (JP2000-48927) and Figures 2 and 3b of Isao.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the brush with three or more contact portions.

It would also have been obvious to one having ordinary skill in the art at the time the invention was made to extend the tip end of the lead wire with a certain length into the brush, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

As a result, the rejection is still deemed proper and repeated herein after.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Isao et al. (JP 06-133500).

Regarding claim 13, Isao et al. show a brush assembly comprising:

- A brush having three or more tapered contact portions (Figure 3a) which are in contact with a surface of a commutator connected to a shaft; and
- A lead wire (7) having a tip end portion thereof embedded in said brush;
- Wherein said brush is press-molded (Abstract) in a pressing direction perpendicular to a normal of the surface of said commutator, and the contact portions of said brush are disposed at opposite edges of said brush in said

pressing direction and at an intermediate portion between said opposite edges, and the tip end portion of said lead wire is inserted into said brush in said pressing direction so as to extend at least up (including the entire length of the brush) to a location corresponding to a second one of said contact portions.

Regarding claim 14, Isao et al. show a brush assembly (Figures 2-4) comprising:

- A brush (14) having two tapered contact portions which are in contact with a surface of a commutator (4) connected to a shaft (11); and
- A lead wire (7) having a tip end portion thereof embedded in said brush;
- Wherein said brush is press-molded (abstract) in a pressing direction perpendicular to a normal of the surface of said commutator, and the contact portions of said brush are disposed at opposite edges of said brush in said pressing direction, and the tip end portion of said lead wire is inserted into said brush in said pressing direction so as to extend at least two thirds (including the entire length, Figure 3b) of the length of said brush in said pressing direction.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 3, 5, 7, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruhn in view of the applicant's admitted of prior art (Figures 6-10).

Regarding claim 1, Bruhn shows a brush assembly comprising:

- A brush having three or more tapered contact portions (14, 15) which are in contact with a surface of a commutator fixedly secured to a shaft, and
- A lead wire (2) having a tip end portion thereof embedded in said brush,
- Wherein said brush is press-molded in a pressing direction, and the contact portions of said brush are disposed at opposite edges of said brush in said pressing direction and at an intermediate portion between said opposite edges, and the tip end portion of said lead wire is inserted into said brush in said pressing direction so as to extend up to a location or farther therefrom corresponding to a second one of said contact portions counted from a lead wire inserting side of said brush.

Bruhn does not show the brush being press-molded in a pressing direction perpendicular to a normal of the surface of said commutator.

The applicant's admitted of prior art (Figures 6-10) shows said brush being press-molded in a pressing direction perpendicular to a normal of the surface of said commutator for the purpose of reducing electric resistance.

Since Bruhn and the applicant's admitted of prior art are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to press mold the brush in the mentioned direction as taught by the applicant's admitted of prior art for the purpose discussed above.

Regarding claims 3, 5, 9, and 11, it is noted that Bruhn and the applicant's admitted of prior art also show all of the limitations of the claimed invention.

Regarding claim 7, it is noted that although neither Bruhn nor the applicant's admitted of prior art discloses the amount of copper in the brush. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the brush with 30 to 70 percent weight of copper, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

7. Claims 2, 4, 6, 8, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruhn in view of the applicant's admitted of prior art (Figures 6-10) and further in view of Kerlin et al.

Regarding claim 2, Bruhn shows a brush assembly comprising:

- A brush having two tapered contact portions (14, 15) which are in contact with a surface of a commutator fixedly secured to a shaft, and
- A lead wire (2) having a tip end portion thereof embedded in said brush.

Bruhn does not show said brush being press-molded in a pressing direction perpendicular to a normal of the surface of said commutator, and the contact portions of said brush are disposed at opposite edges of said brush in said pressing direction, and the tip end portion of said lead wire is inserted into said brush in said pressing direction so as to extend over two thirds or more of the length of said brush in said pressing direction.

The applicant's admitted of prior art (Figures 6-10) shows said brush being press-molded in a pressing direction perpendicular to a normal of the surface of said commutator for the purpose of reducing electric resistance.

Kerlin et al. show the tip end portion of the lead wire (3) inserted into said brush so as to extend over two thirds or more of the length of said brush in said pressing direction for the same purpose.

Since Bruhn, the applicant's admitted of prior art, and Kerlin et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to press mold the brush in the mentioned direction as taught by the applicant's admitted prior art and to extend the tip end of the lead wire over two thirds or more of the length of the brush as taught by Kerlin et al. for the purpose discussed above.

Regarding claims 4, 6, 10, and 12, it is noted that Bruhn and the applicant's admitted prior art also show all of the limitations of the claimed invention.

Regarding claim 8, it is noted that although neither Bruhn, the applicant's admitted prior art, nor Kerlin et al. discloses the amount of copper in the brush. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the brush with 30 to 70 percent weight of copper, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Information on How to Contact USPTO

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

10/21/03

A handwritten signature in black ink, appearing to read "Dang D. Le". The signature is fluid and cursive, with the first name "Dang" being the most prominent.

**DANG LE
PRIMARY EXAMINER**